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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,299	12/22/1999	BOON-LOCK YEO	042390.P7940	5988

7590 01/04/2006

JOHN P WARD
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 900251026

EXAMINER	
RAO, ANAND SHASHIKANT	
ART UNIT	**PAPER NUMBER**
2613	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/470,299	YEO ET AL.	
	Examiner	Art Unit	
	Andy S. Rao	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *27 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-9,12-17 and 20-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-9, 12-17, and 20-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/27/05 has been entered.

2. Applicant's arguments with respect to claims 1, 3-9, 11-17, 19-24 as filed in 5/4/04 have been considered but are moot in view of the new ground(s) of rejections based previously uncited portions of the Akiwumi-Assani reference addressing the newly added limitations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-9, 12-17, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrew et al., (hereinafter referred to as "Andrew") in view of Akiwumi-Assani et al., (hereinafter referred to as "Akiwumi-Assani").

Andrew discloses a method for decoding compressed video (Andrew: column 5, lines 10-15), comprising: reading a stream of compressed video into a memory (Andrew: column 6, lines 54-66), said video having multiple pictures, each picture having one or more independent

elements (Andrew: column 8, lines 1-20); assigning, via a first processor of a group of processors sharing said memory (Andrew: column 6, lines 40-55), at least one independent element per processor to be decoded by the processors in parallel (Andrew: column 7, lines 37-52), as in claim 1. However, even though Andrew discloses that the decoder is an MPEG decoder processing (Andrew: column 10, lines 10-23) which one of ordinary skill in the art would associate with having a slice layer as in the claims, it fails to disclose parallel processing the bitstream according in independent units corresponding to slices including assigning a varying number of slices to individual processors, although it suggests that other sequences are employable other than the disclosed horizontal row processing (Andrew: column 7, lines 65-68). Akiwumi-Assani discloses a method and apparatus for MPEG digital video decoding (Andrew: column 5, lines 1-10) in parallel processing where the decoding occurs on a slice level (Akiwumi-Assani: column 2, lines 40-60; column 5, lines 20-40) including assigning a varying number of slices to individual processors (Akiwumi-Assani: column 5, lines 50-67; column 6, lines 1-15: partitioning according to a total number of bits instead of total number of slices results in varying numbers of assigned slices to each individual processor) in order to efficiently decode coded video (Akiwumi-Assani: column 4, lines 30-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate Akiwumi-Assani slice parsing into the Andrew decoding method in order to efficiently process the compressed video. The Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, has all of the features of claim 1.

Regarding claims 4-5, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses assigning the independent elements a varying number of slices to

individual processors (Akiwumi-Assani: column 5, lines 50-67; column 6, lines 1-15: partitioning according to a total number of bits instead of total number of slices results in varying numbers of assigned slices to each individual processor), as in the claims.

Regarding claim 6, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses that the slice includes at least one macroblock (Akiwumi-Assani: column 4, lines 30-35), as in the claim.

Regarding claim 7, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses decoding in accordance with MPEG (Andrew: column 5, lines 20-25), as in the claim.

Regarding claim 8, the Andrew decoding method, now incorporating Akiwumi-Assani's slice parser, discloses "real-time" decoding (Andrew: column 6, lines 33-37), as in the claim.

Andrew discloses a computer readable medium (Andrew: column 25-35) having stored thereon a set of instructions (Andrew: column 6, lines 32-35), said set of instructions for decoding compressed video (Andrew: column 5, lines 10-15), which when executed by a processor (Andrew: column 6, lines 65-68), cause said processor to perform a method comprising the steps of, comprising: reading a stream of compressed video into a memory (Andrew: column 6, lines 54-66), said video having multiple pictures , each picture having one or more independent elements (Andrew: column (Andrew: column 8, lines 1-20); assigning, via a first processor of a group of processors sharing said memory (Andrew: column 6, lines 40-55), at least one independent element per processor to be decoded by the processors in parallel (Andrew: column 7, lines 37-52), as in claim 9. However, even though Andrew discloses that the decoder is an MPEG decoder (Andrew: column 10, lines 10-23) which one of ordinary skill in

the art would associate with having a slice layer as in the claims, it fails to disclose parallel processing the bitstream according in independent units corresponding to slices including assigning a varying number of slices to individual processors, although it suggests that other sequences are employable other than the disclosed horizontal row processing (Andrew: column 7, lines 65-68). Akiwumi-Assani discloses a method and apparatus for MPEG digital video decoding (Andrew: column 5, lines 1-10) in parallel processing where the decoding occurs on a slice level (Akiwumi-Assani: column 2, lines 40-60; column 5, lines 20-40) including assigning a varying number of slices to individual processors (Akiwumi-Assani: column 5, lines 50-67; column 6, lines 1-15: partitioning according to a total number of bits instead of total number of slices results in varying numbers of assigned slices to each individual processor) in order to efficiently decode coded video (Akiwumi-Assani: column 4, lines 30-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate Akiwumi-Assani slice parsing into the Andrew computer implemented decoding method in order to efficiently process the compressed video. The Andrew computer implemented decoding method, now incorporating Akiwumi-Assani's slice parser, has all of the features of claim 9.

Regarding claims 12-13, the Andrew computer implemented decoding method, now incorporating Akiwumi-Assani's slice parser, has discloses that assigning the independent elements a varying number of slices to individual processors (Akiwumi-Assani: column 5, lines 50-67; column 6, lines 1-15: partitioning according to a total number of bits instead of total number of slices results in varying numbers of assigned slices to each individual processor), as in the claims.

Regarding claim 14, Andrew discloses that the slice includes at least one macroblock (Akiwumi-Assani: column 4, lines 30-35), as in the claim.

Regarding claim 15, Andrew discloses decoding in accordance with MPEG (Andrew: column 5, lines 20-25), as in the claim.

Regarding claim 16, Andrew discloses "real-time" decoding (Andrew: column 6, lines 33-37), as in the claim.

Andrew discloses a computer system, comprising: a plurality of processors (Andrew: column 6, lines 42-45); a memory coupled to said plurality of said processors (Andrew: column 6, lines 55-60); a first unit of logic to read a stream of compressed video into a memory (Andrew: column 6, lines 54-66), said video having multiple pictures , each picture having one or more independent elements (Andrew: column (Andrew: column 8, lines 1-20); and said first unit of logic further assigns, via a first processor of a group of processors sharing said memory (Andrew: column 6, lines 40-55), at least one independent element per processor to be decoded by the processors in parallel (Andrew: column 7, lines 37-52); and decoding the independent elements of the video in parallel (Andrew: column 7, lines 30-36), as in claim 17. However, even though Andrew discloses that the decoder is an MPEG decoder (Andrew: column 10, lines 10-23) which one of ordinary skill in the art would associate with having a slice layer as in the claims, it fails to disclose parallel processing the bitstream according in independent units corresponding to slices including assigning a varying number of slices to individual processors, although it suggests that other sequences are employable other than the disclosed horizontal row processing (Andrew: column 7, lines 65-68). Akiwumi-Assani discloses a method and apparatus for MPEG digital video decoding (Andrew: column 5, lines 1-10) in

parallel processing where the decoding occurs on a slice level (Akiwumi-Assani: column 2, lines 40-60; column 5, lines 20-40) including assigning a varying number of slices to individual processors (Akiwumi-Assani: column 5, lines 50-67; column 6, lines 1-15: partitioning according to a total number of bits instead of total number of slices results in varying numbers of assigned slices to each individual processor) in order to efficiently decode coded video (Akiwumi-Assani: column 4, lines 30-45). Accordingly, given this teaching it would have been obvious for one of ordinary skill in the art to incorporate Akiwumi-Assani slice parsing into the Andrew computer implemented decoding method in order to efficiently process the compressed video. The Andrew computer implemented decoding system, now incorporating Akiwumi-Assani's slice parser, has all of the features of claim 17.

Regarding claims 20-21, the Andrew computer implemented decoding system, now incorporating Akiwumi-Assani's slice parser, has assigning the independent elements a varying number of slices to individual processors (Akiwumi-Assani: column 5, lines 50-67; column 6, lines 1-15: partitioning according to a total number of bits instead of total number of slices results in varying numbers of assigned slices to each individual processor), as in the claims.

Regarding claim 22, Andrew discloses that the slice includes at least one macroblock (Akiwumi-Assani: column 4, lines 30-35), as in the claim.

Regarding claim 23, Andrew discloses decoding in accordance with MPEG (Andrew: column 5, lines 20-25), as in the claim.

Regarding claim 24, Andrew discloses "real-time" decoding (Andrew: column 6, lines 33-37), as in the claim.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andy S. Rao
Primary Examiner
Art Unit 2613

asr
December 28, 2005